

CLAIMS

1. An active matrix display device comprising a row and column array of picture elements (12), sets of row and column address conductors (18, 19) for selecting rows of picture elements and providing data signals to the picture elements of a selected row respectively, drive means (21, 23, 25) for supplying selection signals and multi-bit digital data signals respectively to the set of row address conductors and the set of column address conductors, and in which the multi-bit digital data signals supplied to the column address conductors are converted into analogue voltage levels for use by the picture elements by a plurality of serial charge redistribution digital to analogue conversion means (30), each conversion means (30A, 30B, 30C) comprising at least first and second capacitances interconnectable by at least one conversion switch (31) and between which charge is shared, and in which the first and second capacitances of a conversion means are provided by the capacitances of two column address conductors, wherein the drive means is arranged to alternate the supply of data signals to the first and second column address conductors of each conversion means.
- 20 2. A device according to Claim 1, wherein the column address conductor (19) of a conversion means to which the data signals are applied is changed after one or more complete multi-bit signal conversions performed by the conversion means (30).
- 25 3. A device according to Claim 1 or Claim 2, wherein the supply of data signals to the column address conductors (19) of each conversion means is controlled by a switch arrangement (31A, 31C).
4. A device according to Claim 3, wherein the switch arrangements 30 of all conversion means are operable together by the drive means.

5. A device according to Claim 3 or Claim 4, wherein the switch arrangement comprises a respective switch device (31A, 31C) connected between a column address conductor (19) and a serial digital data signal output (32) of the drive means.

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6. A device according to any one of the preceding claims, wherein the polarity of the voltage provided to the picture elements is inverted periodically, and wherein the alternation of the column conductors (19) of a conversion means to which a data signal is applied to generate the analogue 10 voltage level for a given picture element is synchronised with the inversion of the picture element voltage.

7. A device according to Claim 6, wherein the drive means and the conversion means are operable such that for a given picture element the 15 column address conductor (19) of its associated conversion means to which a data signal is applied is changed each time the polarity of the picture element voltage is inverted.

8. A device according to Claim 6, wherein the drive means and the 20 conversion means are operable such that for a given picture element the column address conductor of its associated conversion means to which a data signal is applied is changed every second time the polarity of the picture element is inverted.

25 9. A device according to any one of the preceding claims, wherein the picture elements comprise liquid crystal display elements.

10. A device according to Claim 9, wherein the drive means is arranged to alternate the supply of data to the first and second column 30 address conductors with a period which is shorter than the response time of the liquid crystal material.